The Growing Zone

A Newsletter for Gardeners of all Levels

By Helena Area Master Gardeners

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Organic Straw Bale Garden in Montana

Inside this issue:

Linda Dahl, Master Gardener Level 3

I can't recall the first time I heard about straw bale gardening. I was immediately hooked on the idea though – planting a kitchen garden, in neat attractive rows without the need for digging and weeding; an alternative area in my garden for growing an abundance of healthy vegetables; and then, producing leftovers of heaping compost that can be tilled into the soil for next season – how good can it get? Well, as I found out, in Montana this process isn't exactly easy, but it is worth a try!

Obtaining Straw

The first thing you need for a straw bale garden is straw. Straw is the stems left when wheat is harvested, and is quite different from hay, which is various forage grasses and/or alfalfa with seed heads. Straw is typically yellowish in color while hay is green to brown. Straw is produced in the fall, so plan ahead to purchase bales in the fall. Straw bales often include a few wheat seed heads, which will sprout and produce a great crop of green wheat with added fertilizers and moisture.

Planning the Garden

Your amount of bales will depend on the size of your area and how ambitious you are. I started with 8 bales, which made a U shaped garden area of approximately 12' x 8'x 12'.

Another consideration is positioning the bales for sun exposure, growth, and access. As you can see in these photos, I allowed plenty of area for trailing plants, and walkways around the bales for harvesting. The straw bale garden was placed in an area with full sun for maximum growth.

Next, I had to decide on the crops to plant in the bales. I am fortunate to have several raised beds where I grow herbs, greens, most of my tomatoes, and root crops. I decided to use the bales for vining crops (summer squash, cucumbers, melons) that take too much space in the raised beds, but would have plenty of room to roam around the base of the bales. In addition, I found the straw bales perfect for potatoes. I also added a couple of tomato plants, beans, and some morning glories.

Conditioning the Straw Bales Organically

The book "Straw Bale Gardens" by Joel Karsten (hereafter referred to as "the Book") sets forth two methods to "condition" the bales to create a decomposed medium to plant in: "organically" (using only organic fertilizer and organic potting soil) or "not organically" (using lawn fertilizer and non-organic potting soil). Every edible garden area at our place is a natural and organic garden. So, I conditioned the bales organically.

If you have questions or comments, or would like to submit an article or tips and hints, contact us at HelenaMaster-Gardeners@hotmail.com.

Organic Straw Bale Garden in Montana - *continued*

According to the Book, the process of conditioning the bales not organically takes about 10- 12 days, and 17 days organically. I started conditioning the bales in mid-April and planted the end of May, so the process of conditioning my bales organically took about 5 weeks. I attribute the delay to our cool and wet weather.

This following is a summary of a conditioning schedule for an organic garden according to the Book, and was what I followed to begin with:

Day 1	3 cups high nitrogen organic fertilizer	Water to saturation
Day 2	Skip	Water to saturation
Day 3	3 cups high nitrogen organic fertilizer	Water to wash in fertilizer
Day 4	Skip	Water to saturation
Day 5	3 cups high nitrogen organic fertilizer	Water, warm water is best
Day 6	Skip	Water, warm water is best
Day 7	1 ½ cups high nitrogen organic fertilizer	Water, warm water is best
Day 8	1 ½ cups high nitrogen organic fertilizer	Water, warm water is best
Day 9	1 ½ cups high nitrogen organic fertilizer	Water, warm water is best
Day 10	3 cups with P and K	Water to wash in fertilizer
Day 17	Plant today	Water new plantings

I used blood meal for the high nitrogen fertilizer. The blood meal did not attract any animals, except my dogs. It did attract allot of flies and was a little smelly at one point, but that did not last long enough to bother me. For potassium (K) and phosphate (P) I used liquid fertilizers.

I could not follow the chart above precisely because the weather interrupted the process. When it was raining and cold, I just let the bales be, then as soon as possible, went out and applied more blood meal, washing it in with hot water. Eventually, as the weather got warm, the bales started cooking and decomposing. I was then ready to plant!

Planting the Bales

On May 26, I planted the straw bales. Here's a brief outline of the process:

- For direct seeding – place planting mix on top of the bales for a seedbed and sow the seeds on top of the bales.
- For planting transplants - dig a hole in the bale, add sterile soil to the hole, and plant the transplant. Remember, you are digging in straw, and it's not entirely depcomosed at this point, so this is not as easy as it sounds.
- For planting potatoes, you need to dig a deep hole in the bale and place one tuber in one hole, and fill with soil.

Drip system

Setting Up the Watering System/Watering/Fertilizing

The Book recommends using soaker hoses and placing them on the bales *before* planting. I recommend using drip irrigation piping (1 gal. hr.) and placing it on the bales *after* planting. I set the timer for 3 hours every other day. For the first couple weeks I also hand watered the seedlings and transplants until they took hold.

Weeds

Straw bales require a lot of fertilizer because the plants are not planted in soil. I top dressed the plants with organic fertilizer every 3-4 weeks the entire growing season and everything did really well.

Negatives - Problems

I always have problems with weeds because I never use herbicides around edibles, and don't have enough time (or inclination) to hand weed enough. The straw bale garden is no different, and like everywhere else, I had to use the weed whacker every so often to keep it looking tidy. In addition, the wheat grass on the bales needed whacking.

The bad weather in June and part of July created too much moisture and I had fungi growing in the bales till the end of July. It didn't appear to affect the plants though. The late cool weather also delayed conditioning, and then planting, but that is just part gardening in Montana.

Organic Straw Bale Garden in Montana - *continued*

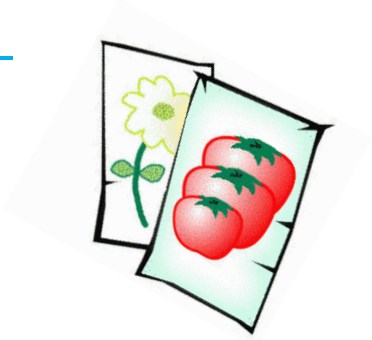
Finally – Success

Here are photos of my garden in mid-August, 2014. I have unending supplies of summer squash and potatoes. The tomatoes have done well; the cucumbers ok; the melons, not so good; and the beans I've found have survived underneath the potatoes. I appear to have a lot of compost brewing inside the bales also.

I have to admit that this was not a neat tidy weed free enterprise, and production wasn't as expected. I am not giving up so easy though and I think I will find more straw bales this fall and try this again next year. I recommend that you give this a try too.

The Safe Seed Pledge

Judy Halm

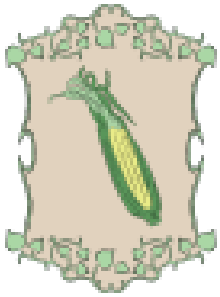


Garden catalogs have been arriving for a while now, and many gardeners are ready to send in their orders for tomatoes, carrots and any other vegetable, fruit or flower that strikes their fancy. For those gardeners who want to grow their gardens organically or who are concerned about introducing genetically modified organisms (GMOs) into their gardens through seeds or plants, there is a helpful way to tell what the seed catalog has to offer. It's called the Safe Seed Pledge.

The Safe Seed Pledge has been around since 1999, when a group of seed catalog companies joined together to make known their stand on genetically engineered seeds. The Safe Seed Pledge reads as follows:

"Agriculture and seeds provide the basis upon which our lives depend. We must protect this foundation as a safe and genetically stable source for future generations. For the benefit of all farmers, gardeners and consumers who want an alternative, **We pledge that we do not knowingly buy, sell or trade genetically engineered seeds or plants**. The mechanical transfer of genetic material outside of natural reproductive methods and between genera, families or kingdoms, poses great biological risks as well as economic, political, and cultural threats. We feel that genetically engineered varieties have been insufficiently tested prior to public release. More research and testing is necessary to further assess the potential risks of genetically engineered seeds. Further, we wish to support agricultural progress that leads to healthier soils, genetically diverse agricultural ecosystems and ultimately healthy people and communities."

The key here is the word "knowingly". Because the possibility of contamination due to genetic drift is very real, seed companies cannot guarantee that seeds they produce or receive from growers are 100% GMO-free. However, companies have pledged to support the recommendations put forth by OMRI, the Organic Materials Review Institute. These recommendations prohibit the use of genetically engineered organisms in the production of seeds or plants used for organic crops.



This pledge can be found in numerous wordings in seed catalogs and from companies that choose not to sell genetically engineered seeds or plants. You may have to look through catalogs carefully to locate the pledge, since it may be located at any point throughout the catalog. The Council for Responsible Genetics has a web site which lists numerous resources which provide safe seeds: http://www.councilforresponsiblegenetics.org/ViewPage.aspx?pageId=261

GROWING HEILOOM AND UNUSUAL TOMATOES IN MONTANA – SUMMER 2014 by Linda Dahl

Name	History/Uses	Seed Supplier	Growth Type	Fruit Type/Size	Date of Maturity	Quantity of Fruit	Quality of Fruit	Positive/ Negative comments	Grade for MT Growing
PRINCIPE BORGESE	Southern Italian tomato used for sauces and sun drying. Also good for salads in place of cherry tomatoes. Heirloom	Terrior Seeds	Determinate	Small, Plum shaped fruit, 1- 2 inches. Grows in large clusters.	7/21/14	Prolific all season.	Like a plum tomato, meaty opposed to juicy. Few seeds. Wonderful rich flavor.	This is a new found versatile favorite and one I will always grow.	A
SAN MARZANO	Since the 1920's the quintessential Italian tomato for tomato sauce. Also good for paste, roasting, and everything else. Heirloom.	Terrior Seeds	Indeterminate.	The original plum tomato, 3-5 inches. Grow in clusters.	7/23/14	Great producer until frost.	Most flavorful plum tomato. Highly recommended. My favorite sauce tomato.	This tomato is an absolute must in my garden.	A
SAN MARZANO REDORTA	Italian plum tomato from Bergamo, Italy. A variety developed from the San Marzano. Good for sauces, salsas, canning and roasting. Heirloom.	Terror Seeds	Indeterminate	Large plum, 5-7 inches.	8/15/14	Abundant once it gets going.	Twice the size of the San Marzano with good flavor.	Slower to ripen. Unattractive vines. Prefer the original.	B-
INDIGO APPLE	Hybrid – from Napa Valley, California.	Wild Boar Farms	Determinate	Large clusters of medium sized fruit. Young fruit is purple, but as they ripen the top turns black and the underside red.	8/15/14	Good producer.	Very ripe fruit has excellent sweet flavor.	Slow to ripen, but is such a beautiful and flavorful tomato I will grow again.	B+
PINK FURRY BOAR	Hybrid – from Napa Valley, California	Wild Boar Farms	Determinate	Unusual medium 3-5 inch pink tomato, with yellow stripes	8/5/14	A small bush – not a heavy producer	Very juicy, mild flavored	Slow to ripen. Beautiful fruit, but not great tasting.	C
PORK CHOP	Hybrid – from Napa Valley, California	Wild Boar Farms	Indeterminate	Beefsteak type, true yellow, medium sized.	8/15/14	Fair producer	Excellent sweet flavor, with a salty taste. I did not have to put salt on this tomato!	This is the best yellow tomato I have ever had. Will be in my garden next year.	A
ALASKIAN FANCY	Hybrid – Origin unknown. Heirloom.	Reimer Seeds	Determinate	Called a plum (but actually a round tomato) 2 inches.	7/14/14	Medium sized bush, produces early and well throughout the season.	Not a true plum tomato as expected. Not great flavor. Good early tomato for salads though.	Ok for salads. I was looking for an early plum to use before the San Marzano ripened. Both ripen about the same time, and the San Marzano is far superior.	C
COSTOLUTO FIORENTINO	Heirloom from Tuscany region of Italy.	Reimer Seeds	Indeterminate	Medium sized red tomatoes.	8/8/14	Large vine and good producer	Tomatoes have a high flavor of sugar and acid making it good for sauces, but can be used for everything.	Very good – will grow again.	B
KELLOGG'S BREAKFAST TOMATO	Heirloom from USA.	Reimer Seeds	Indeterminate	Extra Large orange beefsteak tomato.	8/9/14	Yields are good once it gets going.	Beautiful orange tomato with rich flavor and few seeds. Almost looks like a mango when sliced for a sandwich.	Great slicing tomato. Will absolutely grow again!	A
PAUL ROBESON	Russian heirloom named after the singer	Reimer Seeds	Indeterminate	Medium sized maroon toma-	7/11/14	Great producer.	Attractive black slicing tomato.	Love this one! Will grow again.	A

Tomato Growth Types

Judy Halm

One of the gardener's favorite activities is planting tomatoes in the home garden plot or in pots on the patio. It's great fun to watch the plants grow, bloom and produce great-tasting tomatoes. Whether planting from seeds or purchasing from transplants, a gardener needs to know the best type of plant to use for his or her particular situation.

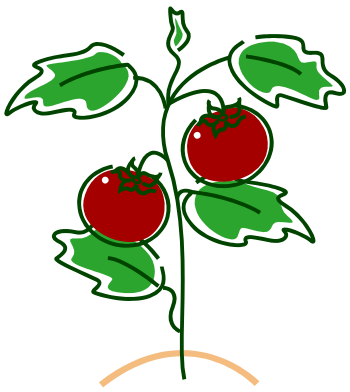
Tomatoes come in two main growth types: determinate and indeterminate. Determinate varieties are also known as bush tomatoes tend to be shorter and "bushier" that other types. Determinate tomato varieties produce fruit that ripens within a limited period of time, usually one to three weeks. The plant stops shoot formation when flowers set on the top of the shoot .

Indeterminate tomato varieties grow much larger, often six to ten feet, and will require staking, caging or trellising. They need sufficient garden space to spread out, so are probably not suitable for container growing. Indeterminate tomatoes continue to grow, to produce flowers and to set and ripen fruit throughout the growing season, until the first frost.

For production of tomatoes throughout the season, plant a combination of determinate and indeterminate tomatoes.

Major Differences Between Determinate and Indeterminate Tomatoes

http://squarefoot.creatingforum.com/t3013-tomatoes-determinate-vs-indeterminate



Simple Idea for Quick Plant Protection

Judy Halm

Gardeners are always looking for quick methods to offer their growing plants protection from the weather, especially when spring or fall frosts are likely. Here's a fast way to set up a low tunnel, with a minimum of supplies.

What you need:
Most of these supplies can be purchased from your local home supply store; row covers and row cover clamps can usually be found at nurseries or from online suppliers.

- Rebar - 4 to 6 two-foot lengths of ½" rebar, depending on the length of the bed to be covered
- PVC pipe – ten-foot lengths of ¾" PVC
- Hammer
- Fluorescent spray paint
- Row cover clamps or clothes pins
- Row cover or heavy plastic sheeting

How to Build it:

- First, spray paint half of each length of rebar with the fluorescent paint. This is to prevent tripping over the rebar once it is put in the ground. Unpainted rebar disappears into the background of garden soil and can become a hazard.
- Next, pound two rebar lengths – painted side up – about a foot into the ground, opposite each other across the garden bed. Continue pounding in rebar at three to five-foot intervals along the length of the garden bed.
- Slide one end of a ten-foot PVC pipe over one of the rebar lengths; bend the PVC into a half circle and slide the opposite end over the matching rebar on the opposite side of the bed. Continue adding PVC to rebar along the length of the bed.
- Drape the row cover or plastic sheeting over the PVC, covering the length of the garden bed. You can even use plastic tarps for additional protection.
- Secure the row cover or plastic with row cover clamps or clothes pins.
- In windy areas, it is helpful to secure the sides of the row cover or plastic with something heavy, such as rocks, soil or metal T-posts laid on the edge of the material.

Photo courtesy Wayne Marshall, via Flickr: https://www.flickr.com/photos/wayneandwax/tags/belmontacres/ Creative Commons license info at http://creativecommons.org/

This same low tunnel can work nicely for raised beds. Hammer the rebar into the ground on the inside of the raised bed, and attach the PVC. You may need to shorten the PVC pipe, depending on the width of your raised bed.

For more information, visit the following web sites:

http://www.motherearthnews.com/organic-gardening/mini-greenhouse-zm0z13fmzkin.aspx?SlideShow=1#axzz3KmAq48um

http://www.groworganic.com/organic-gardening/articles/how-to-build-a-low-tunnel-hoop-house

Plant Profile: Onions

Connie Geiger

Bulb onions are from the allium family, which includes garlic, leeks, scallions and shallots. They have been grown under cultivation since 4000 BC, making them one of the oldest garden vegetables. Their origin is believed to be from Central Asia, north of Afghanistan, and they are an extremely adaptive plant, grown from the tropics to the sub-arctic. One of the reasons for the evolutionary success of bulb onions is their response to day-length, and their unique chemical makeup.

When looking for bulb onions in your seed catalogues this winter, you'll notice they are categorized into "short-day" or "long-day". That is because certain varieties have adapted themselves to start bulb formation based on the length of day-light to which they are exposed. Short-day onions are triggered to start bulb formation and stop vegetative growth when day length peaks at 10 to 12 hours per day. Short-day onions grow best in southern latitudes where they are planted in the fall for spring harvest. Short-day onions are usually sweeter and milder, but they also have a higher water content so can only be successfully stored for about 3 months.

In long-day varieties the trigger for bulb formation is a longer day length of 15 to 16 hours. Long-day varieties are less sweet, more pungent, but store much longer than short day varieties. There are some long-day varieties that are sweeter than others, like Walla Walla sweet, and white or yellow Spanish onions. To grow bulb onions successfully in Montana (or anywhere north of about 35 degrees latitude), it is usually best to grow long-day varieties.

There are also now some onion varieties called intermediate, or day-neutral, that have been bred to trigger good bulb growth at 12 to 14 hours of daylight, no matter what latitude they're grown in. They grow best in Zones 5 and 6, between latitudes 32-42 (Helena, by the way, is at latitude 46.6)

Botanical facts about onions: A well-developed onion has about 13 leaves, and 13 rings – each ring of the bulb corresponds to a leaf, and the larger the leaf, the larger the ring. Though most gardeners think of onions as annuals to be planted each spring, they are actually biennials. During the first year of growth the plant grows vegetatively until the proper day length triggers the plant to put its energy to bulb formation, rather than the leaves. The bulb is intended to be the food source for the next year's flower and seed production. However, some environmental conditions can cause them to "bolt" and form flower stalks (scapes) during the first year. Since onions require about four weeks of cold storage to trigger flower formation, long stretches of alternating temperature changes can sometimes cause onions to bolt during the first year. Once the plant starts to form a flower stalk it won't form a good bulb for storage – it has essentially ended its life cycle, so you might as well harvest it at that point, to be used like a scallion.

Onion chemistry: Onions (and other allium family members) have evolved a very effective defense mechanism, with which any cook is quite familiar. Cutting, chopping, or eating onions damages the cell walls, releasing a sulfur-containing compound which is quickly rearranged – and rearranged again - by enzymes in the onion. A gaseous compound is formed, and when this compound makes contact with your eyes it produces a weak sulfuric acid solution. The irritation from the sulfuric acid then triggers tear formation in order to clean out the eyes. (Check out the web site http://www.compoundchem.com/wp-content/uploads/2014/01/The-Chemistry-of-an-Onion-v1.pdf to review the chemistry of these reactions). Certainly the effects of these compounds are an effective way for the plant to deter birds, insects, and other wild critters from eating them, and explains why alliums are used to kill microbes and repel insects. They can even be harmful if eaten by your pets, damaging their red blood cells. However, it is the sulfur compounds, along with sugars, that give onions (and other alliums) the flavors we love so much in the foods we eat. You can lessen the eye-watering sting by chilling onions before cutting them, or by cutting them under water.

Plant Profile: Onions - *continued*

Growing: Bulb onions can be grown from seed, transplants (purchased from nursery or seed catalogues); or from sets (directly planted in May). Planting from seed allows you to select specific varieties, and can lower the chance of bolting. The drawback is the need to start them indoors in February, for transplanting in early spring. Transplants purchased from a supplier give a similar choice of varieties as planting from seed, without the work of early starting, but they may be a bit expensive – relative to the cost of just buying mature onions at the store. Plant transplants when they're about 3" tall. If they get bigger than that before you have a chance to plant them you can just cut them down to size.

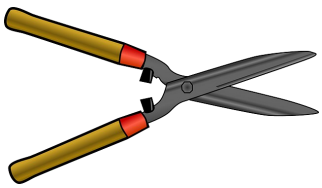
Onion sets are actually baby versions of first year onions. Most sets are grown in Texas, and are typically red, white, or yellow but of no identified variety. They are developed for sale by thickly planting onion seeds late in the summer, and then are harvested when their bulbs are just starting to form. They are cured like tiny versions of mature bulbs. In the spring they can be planted to produce bulb onions for fall harvest. Because sets were already grown the first year (just not to maturity), they can be more prone to bolting than plants grown from seed or transplants. If you're growing from sets, purchase firm sets that have not started to sprout, and that are about the size of a dime. Sets larger than a dime are more likely to bolt, but can still be grown for use as scallions. Store sets in a cool, dark, dry place until ready to plant.

Growing onion seed: If you want to grow your own seed it will be a two-year process. Choose onion bulbs of a non-hybrid variety from your summer harvest. Store the bulbs in cool temperatures (45-55 degrees), then replant them in the spring of the next year, once soil has warmed to 55 degrees. Once they flower, harvest the seed head when the flowering heads start to turn brown, but don't yet shatter when handled. Dry, thrash, and clean the seed, and store for later winter starting indoors.

Onions are fairly hardy so can be planted in early spring, since they can tolerate light frosts. Bulb onions will mature 90-120 days after planting. Onions require full sun for optimum growth, but they have shallow roots so they need consistent watering and regular weeding. Mulching helps to retain even moisture and discourage weed growth. They need a good supply of nitrogen, but too much can cause large necks, greening of the bulbs, and slow maturing. Do not hill onions with soil or the necks may rot during storage. The ideal temperature for bulb formation is 70 or more degrees. Some gardeners have recommended breaking or bending the tops of onions to speed bulb development, but in actuality it stops their development, leading to immature bulbs. Onion bulbs increase in size when sugars formed in the leaves and then move to the bulb, so breaking the tops slows or stops that process. Just let the tops "drop" naturally, and stop watering at that point. Once the tops

It's Time to Prune!

Check out the pruning article in the January 2012 edition of this newsletter, available at http://www.lccountymt.gov/extension.html for information about the correct pruning of trees and shrubs.



Not the correct way to prune a tree!

Recipe of the Month

Sweet Onion Pie

Ingredients

Original recipe makes 6 servings

1 1/2 cups buttery round crackers, crumbled
6 tablespoons butter, softened
2 cups thinly sliced sweet onions
2 cloves garlic, minced
1 tablespoon minced fresh chives
3/4 cup whole milk
2 eggs
1/2 teaspoon salt
3/4 cup shredded Cheddar cheese
1 pinch paprika
1 tablespoon chopped fresh parsley

Directions

Preheat oven to 350 degrees F (175 degrees C).

In a mixing bowl, combine crackers and 4 tablespoons of butter in a bowl until well blended. Press into the bottom and 1 inch up the sides of 8 inch pie plate to form a shell. Refrigerate until needed.

Melt remaining 2 tablespoons butter in heavy skillet over medium heat. Sauté onions and garlic slowly until tender, about 12 minutes. Arrange onions in the cracker crust.

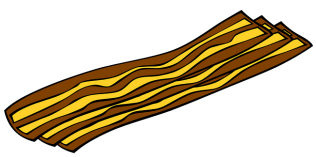
Beat eggs, whole milk, chives, and salt in a bowl until blended. Pour the mixture over the onions. Sprinkle with cheese and paprika.

Bake in a preheated 350 degrees F (175 degrees C) oven for 35 minutes, or until a knife comes out clean. Garnish with the parsley. Serve hot or at room temperature.

Reprinted from http://allrecipes.com/Recipe/Sweet-Onion-Pie/Detail.aspx?prop24=hn_slide1_Sweet-Onion-Pie&evt19=1

Your first job is to prepare the soil. The best tool for this is your neighbor's garden tiller. If your neighbor does not own a garden tiller, suggest that he buy one.
- Dave Barry

My green thumb came only as a result of the mistakes I made while learning to see things from the plant's point of view.
- H. Fred Ale



Life expectancy would grow by leaps and bounds if green vegetables smelled as good as bacon.

- Doug Larson

Gardening Calendar

Connie Geiger

Conditions during each season in your location will determine the actual timing of your garden work. If you have questions regarding the timing of garden activities in your area, please feel free to ask a Master Gardener at HelenaMasterGardeners@hotmail.com.

January

- Check storage vegetables and bulbs for mildew and rot, and destroy those affected.
- Reuse natural Christmas trees as a bird feeding station, or as added wind protection for evergreens; or cut limbs to use as winter protection for perennials
- Consult you garden journal and plan for the new growing season
- Plan and construct, or repair, garden projects: hoop houses, tomato cages, fences, gates, cold frames, trellises, benches
- Reapply or redistribute mulches that have blown or been washed away during the winter. Watch for frost heaving of tender perennials and cover if needed
- Replace windbreaks to protect sensitive landscape evergreens
- Moisten root system of stored geraniums (repeat monthly)
- Remember when deicing walkways and driveways to use calcium chloride or potassium chloride products that are less damaging to plants and lawns
- Bring out bulbs from cold storage for "forcing" for early indoor blooms
- Christmas flowering plants like poinsettia and amaryllis need bright light, cooler temps, fertilizing, and reduced watering
- Watch for rodent damage of trees and shrubs. Install mesh, wire or plastic trunk guards as needed
- Brush heavy snow and ice from tree and shrub limbs to prevent later damage. Multistemmed evergreens (arborvitae) can be tied together.
- Wrap tree trunks of young trees, and those with thin bark, to prevent frost cracking during cold sunny days
- Consult garden catalogues and start comparison pricing for Spring seed orders

February

- Check with local nursery and garden stores for seeds and early planting options
- Inventory and check dates of left-over seed packets; sprout a few in a moist paper towel to ensure still viable
- Order new seeds for Spring planting
- Clean, sharpen, and oil garden tools; sand and repaint handles
- Using detergent and mild bleach solution clean old pots and seed trays to prepare for seed starts
- Clean indoor plants; giving them a "shower" helps remove dust that can clog pores or hinder light penetration and can also wash salts from the soil
- Brush heavy snow and ice from tree and shrub limbs to prevent later damage

March

- Repot indoor plants once vigorous growth begins
- Set up an area for starting your garden seedlings – good light and heat source etc.
- Draw garden layouts
- Review garden journal and notes about successes and failures of previous years
- Take a soil test of your garden soil, if not done in the last 3 years
- Trim certain fruit trees and deciduous trees, and some shrubs
- Cut back dead rose canes, ornamental grasses, and any remaining perennials in flower beds
- Rake remaining leaves from the lawn, to prevent suffocation
- Review lawn service contracts and make changes
- Apply dormant oils to trees and shrubs
- Cover patches of garden with black plastic to warm the soil for early plantings
- Set up a cold frame or hoop house for early start on greens, onions, and radishes
- Tune up and repair lawn mowers, garden tractors, and rototillers
- Aerate, fertilize, and possibly thatch, the lawn
- Once Spring blooming shrubs (forsythia, pussy willow, crabapple) form tiny buds you can cut them to bring indoors and put in water, to force them to bloom

Ask the Experts

We all have questions about our gardens, lawns, trees, flowers or other landscape projects from time to time. Ever wish you could ask an expert in the field for answers to your questions? Here's your chance! In each issue of the newsletter we will answer one or more questions posed by our readers. Send in your questions to HelenaMasterGardeners@hotmail.com and we will pass the questions on to our expert panel for answers.

Brent Sarchet, Lewis & Clark County Extension Agent

Q. My garden hasn't been very productive. What can I do?

A. One of the most important things any gardener can do to ensure they have a successful growing season and harvest is to have their soil tested at least every three years. This involves taking a representative soil sample 0 – 6" in depth preferably in the spring. If you take the sample and submit it to a laboratory for analysis in the fall, keep in mind that you will have more available nitrogen in the spring along with other nutrients than what your analysis indicates. Fertilizing without testing your soil to determine how much if any fertilizer you need is like your doctor prescribing you a medication without knowing your symptoms.

Every year the Extension office sends 30 to 40 soil samples to a laboratory for analysis. Gardeners have to pay for the testing (usually around $30 depending on the lab), and the Extension office pays for the shipping. Consequently, this means I get a copy of the soil test results. We have been doing this for the last four years, and I maintain a file with all the results. That file is about two inches thick. While no two garden soils will be exactly the same, seeing multiple soil results every year gives me a good perspective on the average soil (if there is such a thing) in the Helena area.

From my two inch thick folder full of soil test results, I randomly selected five reports. Below are the averages of those reports. I caution you not to use these results and apply them to your own garden, test to be sure, but this gives you a glimpse of most garden soils in the Helena area.

What can we learn from these results? Typically, most garden soils in Helena are deficient in nitrogen, have sufficient phosphorus and sulfur and have excessive amounts of potassium. The typical pH is around 8 which is alkaline and normal for our area. If gardeners are incorporating compost and carbon material from their yard/garden into their soil keeping the percentage of organic material in their soil around five to eight percent, little additional nutrients outside of nitrogen are usually required, but you need to test to make sure. When it comes to fertilizers, too much is **not** a good thing. Keeping plant nutrient levels as close to optimum as possible, will help to ensure a successful gardening season.

Analysis	Result (average)	Comments
% Organic Material	4.96	Good level (5 – 8% is ideal)
Nitrogen (ppm)	30.8	Good (need an additional 0.5 lbs of N per 1,000 sq ft for a vegetable garden)
Phosphorus (ppm)	123.4	High (no additional P needed)
Potassium (ppm)	720.8	Very High (no additional K needed for a long time)
Sulfur (ppm)	55	Sufficient
pH	8	Alkaline

Event Schedule

Know of an upcoming event related to gardening?

Let us know at HelenaMasterGardeners@hotmail.com!

Master Gardener Celebration with Seed Swap
Saturday, February 21, 2015
3:00 pm - 9:00 pm
Entry Hall at the Fairgrounds
RSVP to the Extension Office

Level I Master Gardener Class
Thursdays, 5:30 pm - 8:00 pm
March 5th - April 30th 2015
Helena College
447-8346 for more information

Intro to Bee Keeping
Wednesdays, 5:45 pm - 7:30 pm
March 11th - April 15, 2015
447-8346 for more information
Helena College

Presented by the Kelsey Native Plant Society:

January Winter Shrub Identification
Wednesday January 28, 2015
7:00pm-9:00pm,
Carroll College Simperman Hall, Room 320

February Warm Season Grass Identification
Wednesday February 11, 2015
7:00-9:00pm
Carroll College, Simperman Hall, Room 320
No sign-up necessary.

Check http://www.mtnativeplants.org/Kelsey_Chapter for more

Useful Links

MSU Extension Yard & Garden: http://www.msuextension.org/category.cfm?Cid=5
Missoula Plant Diagnostics Database: http://www.co.missoula.mt.us/extension/plantdata/
National Center for Appropriate Technology gardening publications: http://www.attra.org/horticultural.html
National Garden Association: http://www.garden.org/
Helena Garden Club: http://helenagardenclub.wordpress.com/
Lewis & Clark County Extension Office Web site: http://www.co.lewis-clark.mt.us/index.php?id=75
MSU Master Gardener Program: http://gardenguide.montana.edu/mgardener/mgardenerindex.asp
Growing Community Project: http://helenagcp.wikidot.com/

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